Essman, W.B. Diurnal Differences in Altered Brain 5-Hydroxytryptamine-Related Regional Protein Synthesis. J. Pharmacol. (Paris), 5: 1974, 28.

DIURNAL DIFFERENCES IN ALTERED BRAIN 5-HYDROXYTRYPTAMINE-RELATED REGIONAL PROTEIN SYNTHESIS. W. Essman, Queens College of the C.U.N.Y., Flushing, N.Y. (U.S.A.)

The relationship between regionally altered brain 5-HT level and microsomal protein synthesis was studied at two divergent, diurnal points in the male CF-1S strain mouse. 5-HT was endogenously higher (33 to 60%) in all regions at 8 AM; there was significantly less C^{14}-leucine incorporation into microsomal protein than at 8 PM. 5-HT elevation after electroconvulsive shock was greater in the PM, particularly in the limbic system; PM protein synthesis was inhibited 25% more by ECS than it was in the AM. A significant elevation of 5-HT in all brain regions (58 to 744%) occurred 45 minutes after a single dose of 6-methyl-tetrahydro-3-carboline (50 mg/kg). Increments were greater in the PM in cerebral cortex, but greater AM increments occurred in the limbic system and cerebellum with comparable AM and PM reductions in protein synthesis. p-chlorophenylalanine (PCPA, 300 mg/kg) resulted in decreased 5-HT content, more extensive in the PM in diencephalon (8 times) and limbic system (1.25 times). Increased microsomal protein synthesis occurred after PCPA treatment and this was greater (40%) when the drug was given in the AM. The most significant effect of 5-HT level and microsomal protein synthesis occurred in the cerebral cortex (ρ=-74) and the limbic system (ρ=-94) in the AM when the former were endogenously higher and there was increased regional susceptibility to alterations effected by agents or events which also modified such macromolecular synthesis.

1003540802

Source: https://www.industrydocuments.ucsf.edu/docs/gnpl0000